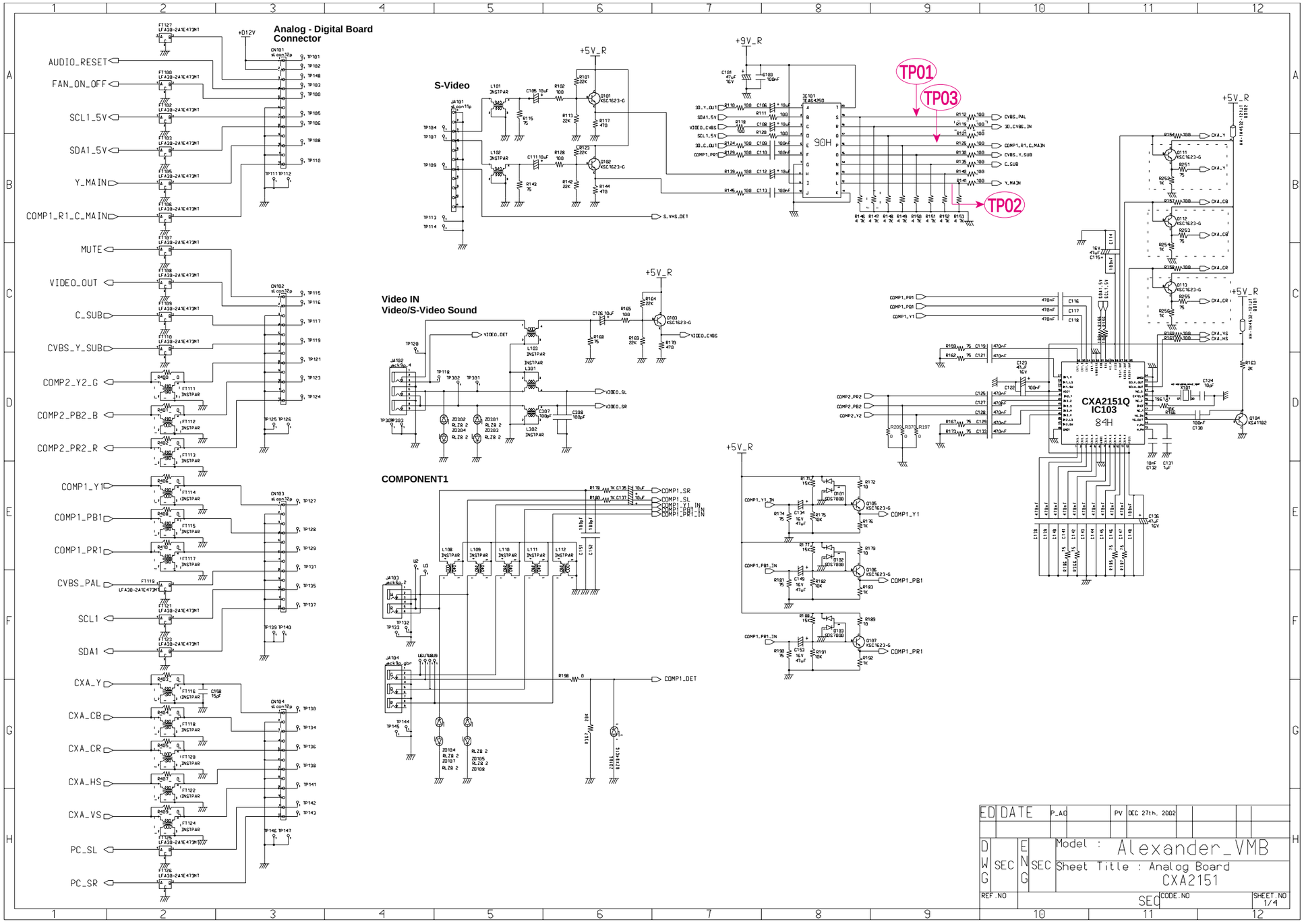
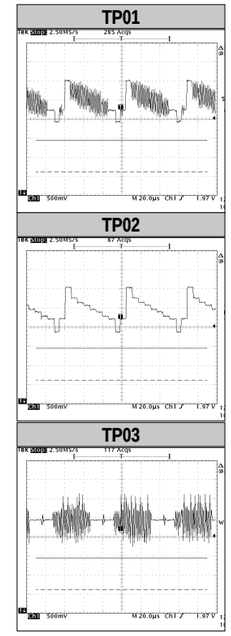
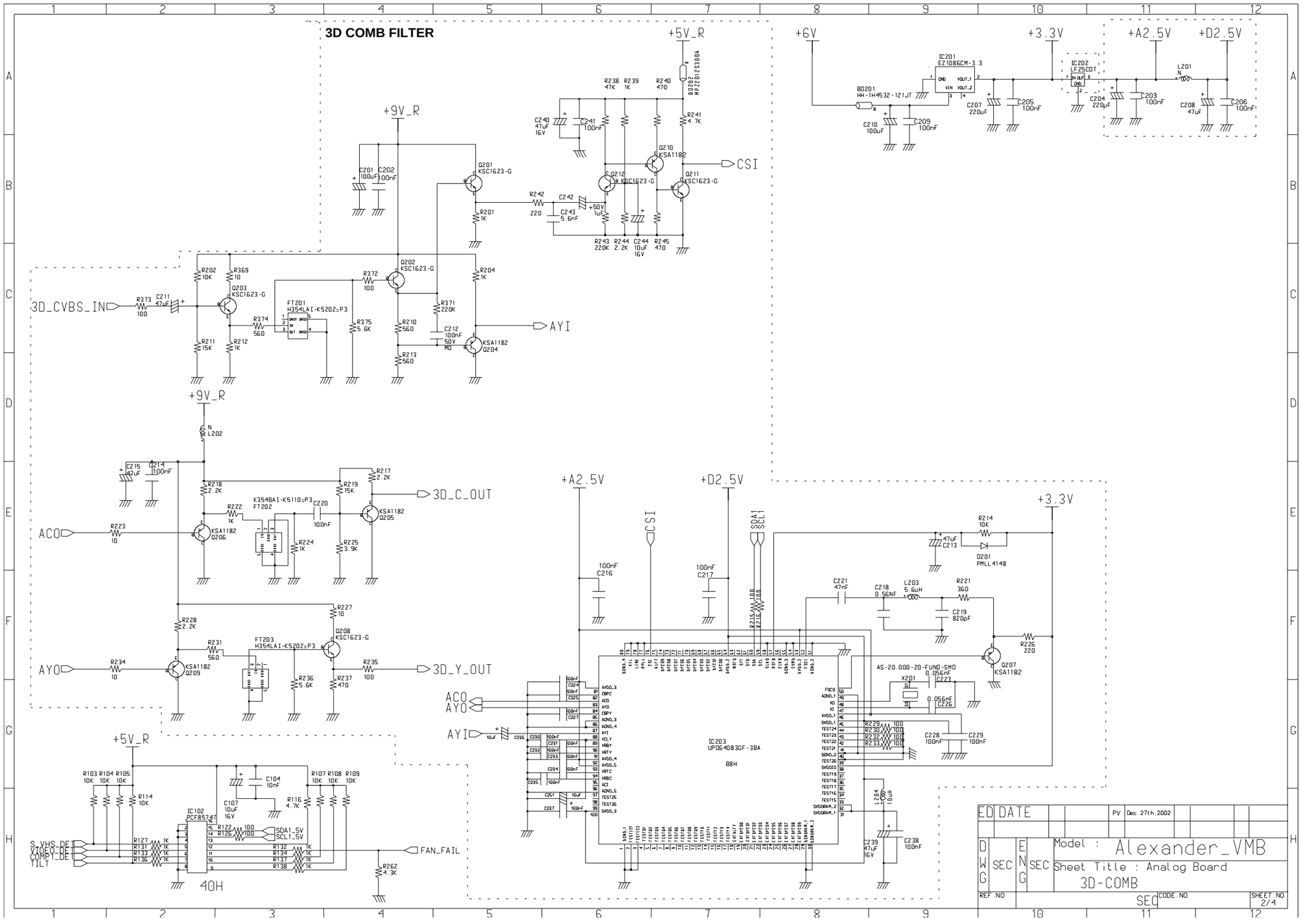
# 5. Schematic Diagrams

## 5-1 ANALOG 1

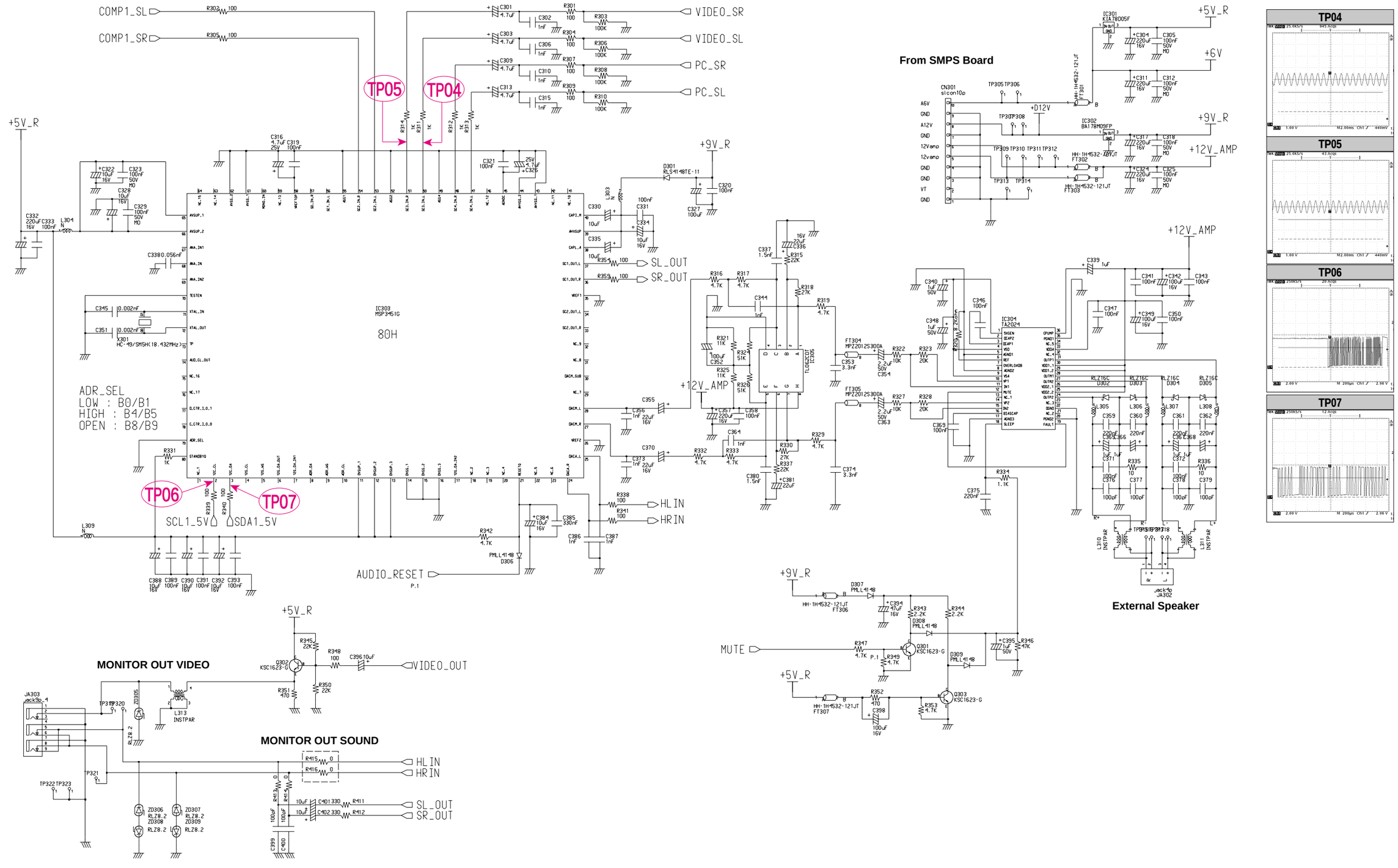


## 5-2 ANALOG 2


3D COMB FILTER
+5V_R
+9V_R
+6V
+3.3V
+A2.5V
+D2.5V
3D_CVBS_IN
3D_C_OUT
3D_Y_OUT
ACO
AYO
AYI
CSI
FAN_FAIL
S_VHS_DET
VIDEO_DET
COMP_DET
TILT
SDA1_5V
SCL1_5V
SDA1
SCL1
IC203
UPD64083GF-3BA
B8H
IC102
PCF8574T
40H
IC201
EZ1086CM-3.3
IC202
LF25CDT
Q201 KSC1623-G
Q202 KSC1623-G
Q203 KSC1623-G
Q208 KSC1623-G
Q210 KSA1182
Q211 KSC1623-G
Q212 KSC1623-G
KSA1182 Q204
KSA1182 Q205
KSA1182 Q206
KSA1182 Q209
KSA1182 Q207
Q201 PMLL4148
FT201 H354LAI-K5202=P3
FT202 K354BAI-K5110=P3
FT203 H354LAI-K5202=P3
X201
AS-20.000-20-FUND-SMD
BD201 HH-1H4532-121JT
L201
L202
L203
L204
ED DATE
PV Dec 27th, 2002
DWG SEC
ENG SEC
Model : Alexander_VMB
Sheet Title : Analog Board
3D-COMB
REF.NO
CODE.NO
SEC
SHEET.NO
2/4

# 5-3 ANALOG 3


COMP1_SL
COMP1_SR
VIDEO_SR
VIDEO_SL
PC_SR
PC_SL
TP05
TP04
+5V_R
+9V_R
+12V_AMP
+6V
IC303
MSP3451G
80H
SL_OUT
SR_OUT
HL IN
HR IN
AUDIO_RESET
ADR_SEL
LOW : B0/B1
HIGH : B4/B5
OPEN : B8/B9
TP06
TP07
SCL1_5V
SDA1_5V
From SMPS Board
External Speaker
MONITOR OUT VIDEO
MONITOR OUT SOUND
VIDEO_OUT
MUTE
IC301
KIA78D05F
IC302
BA178M09FP
IC304
TA2024
TL062CDT
TL062CDT
FT304
MPZ2012S300A
FT305
MPZ2012S300A
CN301
slcon10p
JA303
jack3p
JA302
jack4p


TP04
TP05
TP06
TP07

## 5-4 CONTROL

This drawing is property of SEC
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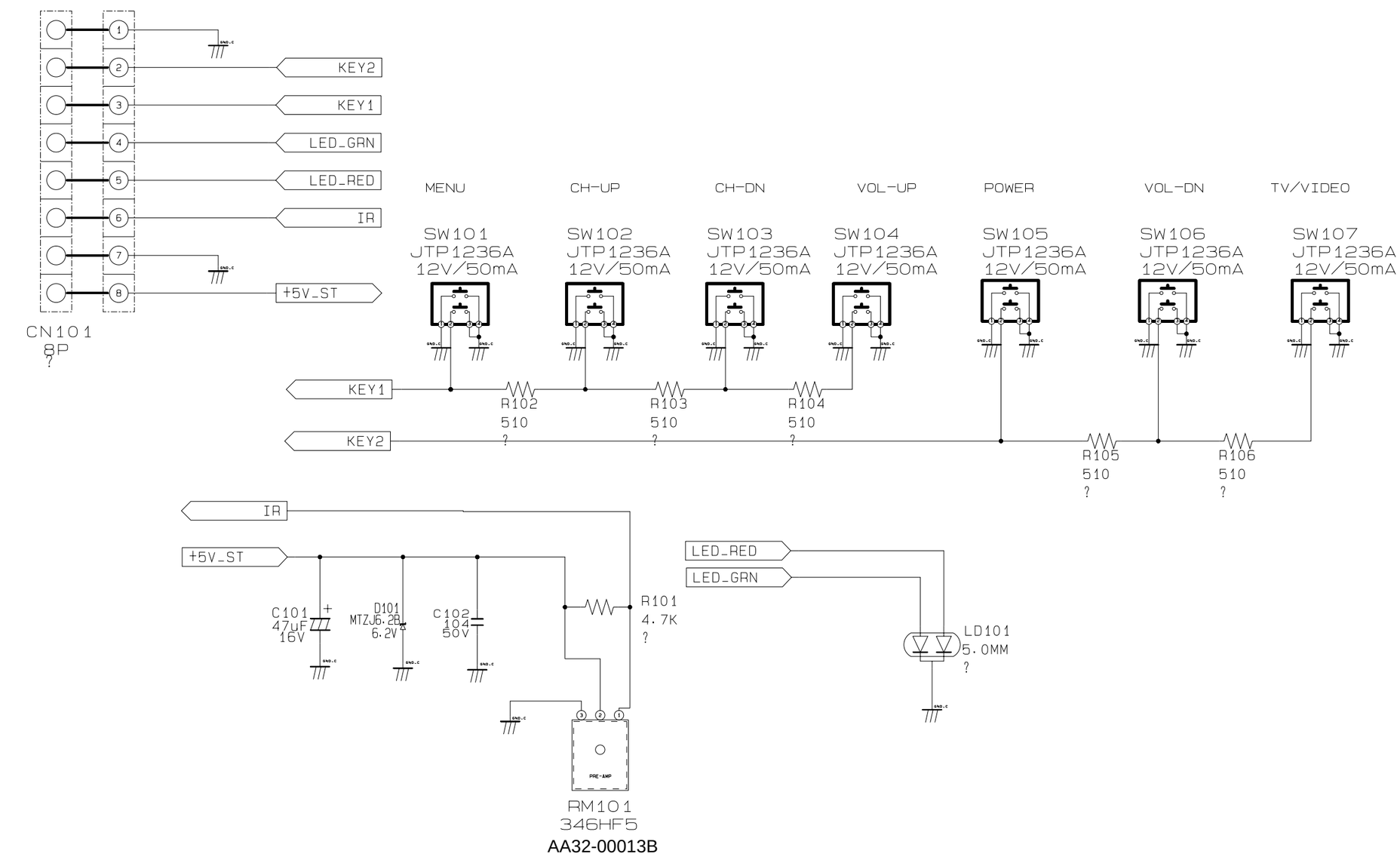
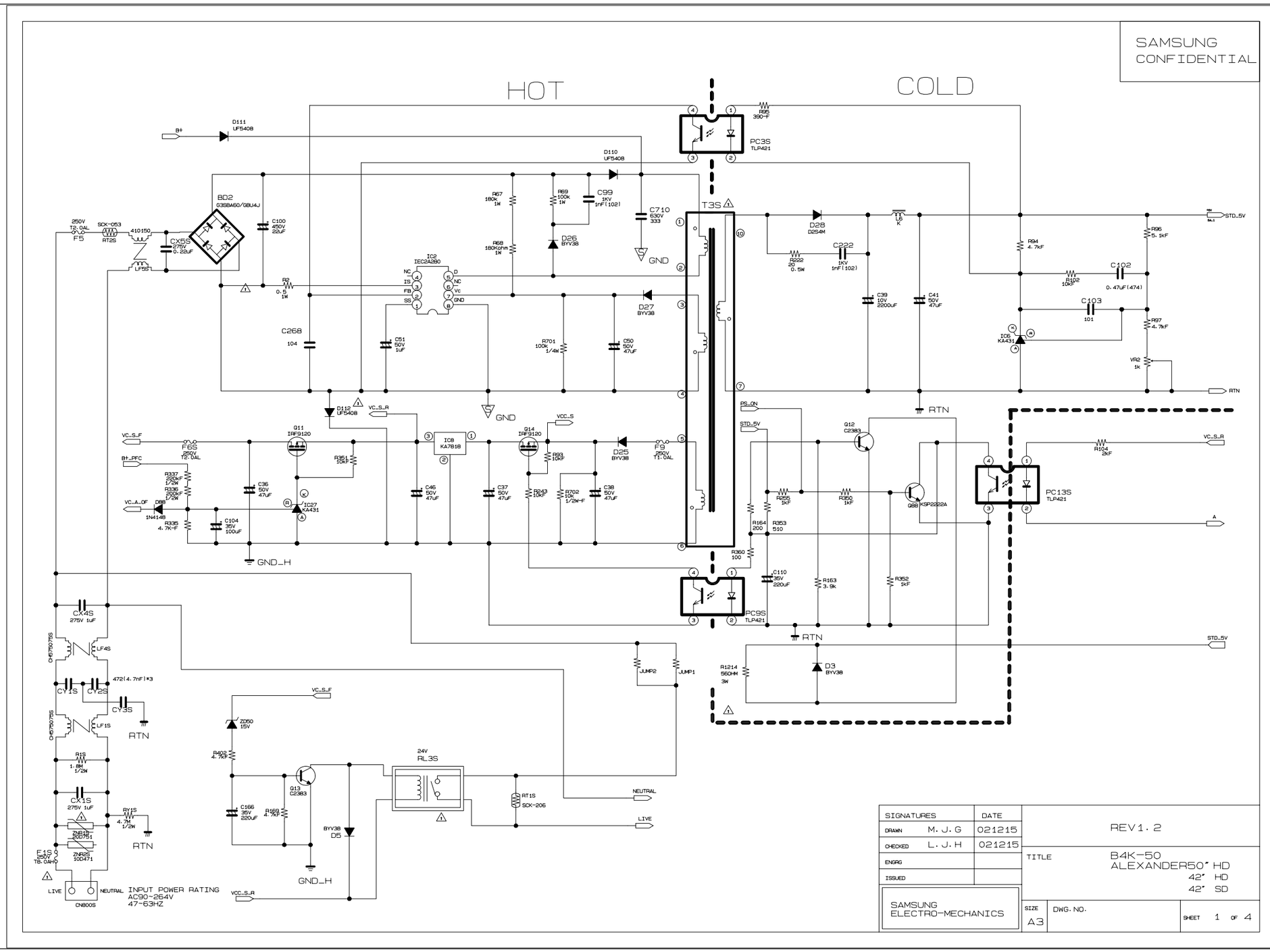
technical-document managing department is prohibited.

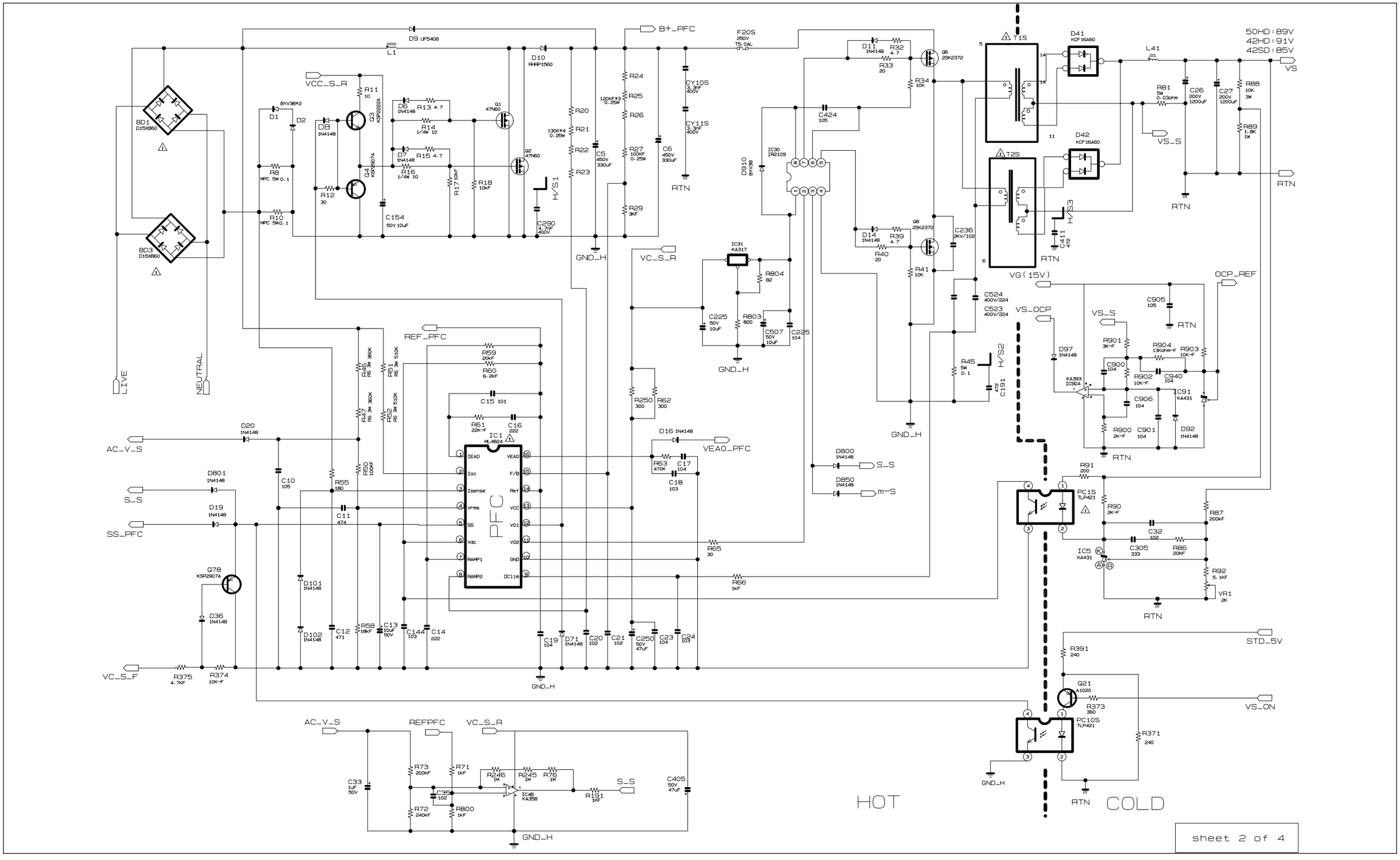



AA32-00013B

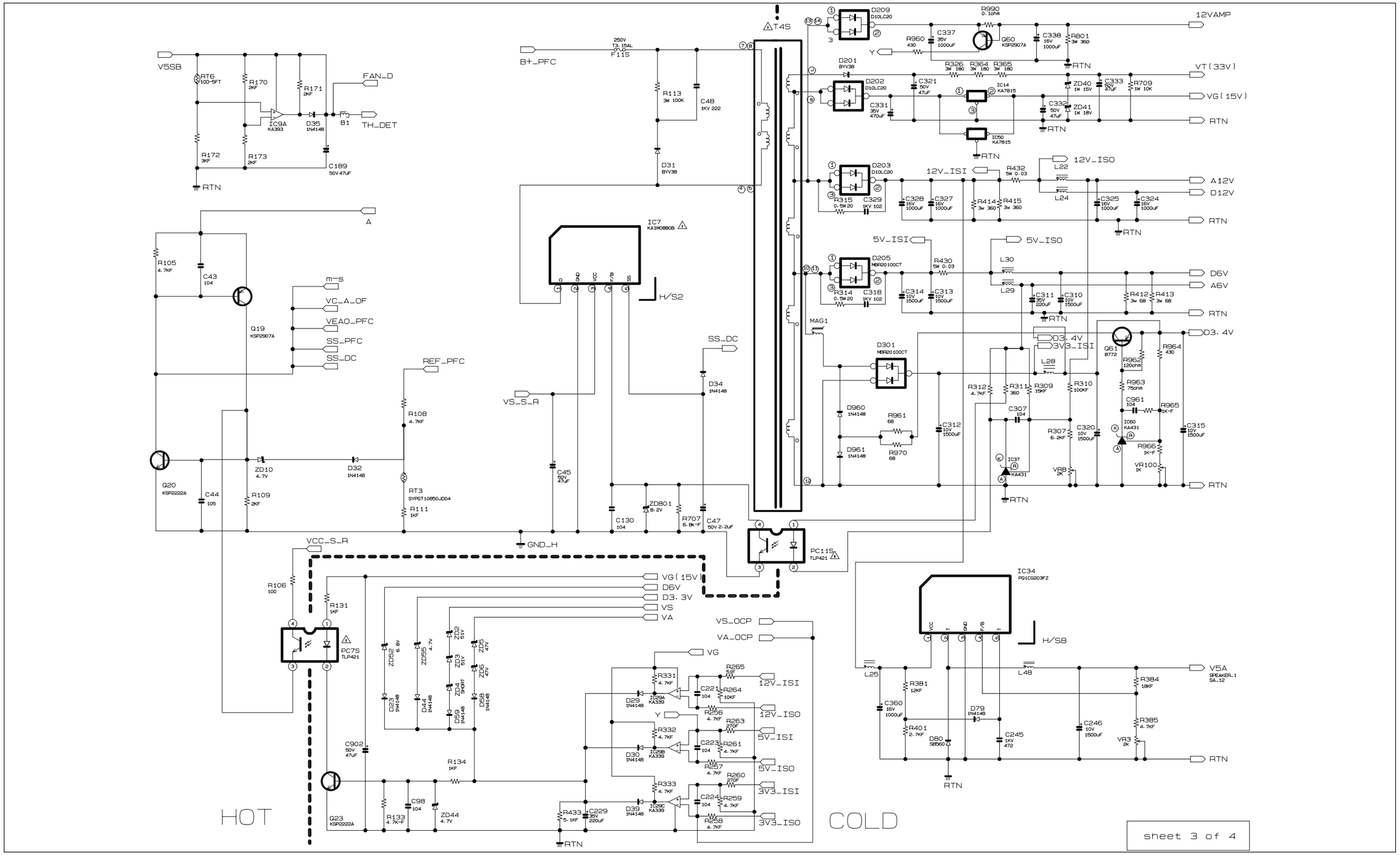
## 5-5 SMPS 1


SAMSUNG
CONFIDENTIAL
HOT
COLD
B+
D111
UF5408
D110
UF5408
PC3S
TLP421
R65
390-F
T3S
GND
BD2
G3SBA60/GBU4J
250V
T3.15AL
F5
SCK-053
410150
RT2S
LF5S
CX5S
275V
0.22uF
C100
450V
22uF
R2
0.5
1W
IC2
IEC2A280
NC
IS
FB
SS
D
NC
Vc
GND
C268
104
C51
50V
1uF
R701
100
1/4W
C50
50V
47uF
D27
BYV38
R67
180K
1W
R69
100K
1W
C99
1KV
1nF(102)
R68
180Kohm
1W
D26
BYV38
C710
630V
333
D28
D2S4M
R222
22
0.5W
C222
1KV
1nF(102)
C39
10V
2200UF
C41
50V
47uF
R94
4.7kF
R96
5.1kF
C102
0.47uF(474)
R102
10kF
C103
101
R97
4.7kF
IC6
KA431
VR2
1k
STD_5V
RTN
D112
UF5408
VC_S_R
GND
VCC_S
PS_ON
STD_5V
Q12
C2383
RTN
VC_S_F
F6S
250V
T2.0AL
Q11
IRF9120
IC8
KA7818
Q14
IRF9120
R93
10kF
D25
BYV38
F9
250V
T1.0AL
R361
10kF
B+_PFC
R337
220kF
1/2W
R336
220kF
1/2W
C36
50V
47uF
VC_A_OF
D88
1N4148
R335
4.7K-F
C104
35V
100uF
IC27
KA431
C46
50V
47uF
C37
50V
47uF
R243
10kF
R702
10k
1/2W-F
C38
50V
47uF
R255
1kF
R350
1kF
Q88
KSP2222A
R164
200
R353
510
R360
100
C110
35V
220uF
R163
3.9k
R352
1kF
PC13S
TLP421
R104
2kF
VC_S_R
A
PC9S
TLP421
RTN
STD_5V
JUMP2
JUMP1
R1214
560HM
3W
D3
BYV38
GND_H
CX4S
275V 1uF
CH5750795
LF4S
472(4.7nF)*3
CY1S
CY2S
CY3S
CH5750795
LF1S
RTN
R1S
1.8M
1/2W
CX1S
275V 1uF
RY1S
4.7M
1/2W
ZNR1S
20D751
ZNR2S
10D471
F1S
250V
T8.0AHD
RTN
LIVE
NEUTRAL
CN800S
INPUT POWER RATING
AC90~264V
47~63HZ
VC_S_F
ZD50
15V
R402
4.7KF
Q13
C2383
C166
35V
220uF
R169
4.7KF
BYV38
D5
GND_H
VCC_S_R
24V
RL3S
RT1S
SCK-206
NEUTRAL
LIVE
SIGNATURES
DATE
DRAWN M.J.G 021215
CHECKED L.J.H 021215
ENGRG
ISSUED
SAMSUNG
ELECTRO-MECHANICS
REV1.2
TITLE
B4K-50
ALEXANDER50" HD
42" HD
42" SD
SIZE
A3
DWG. NO.
SHEET 1 OF 4

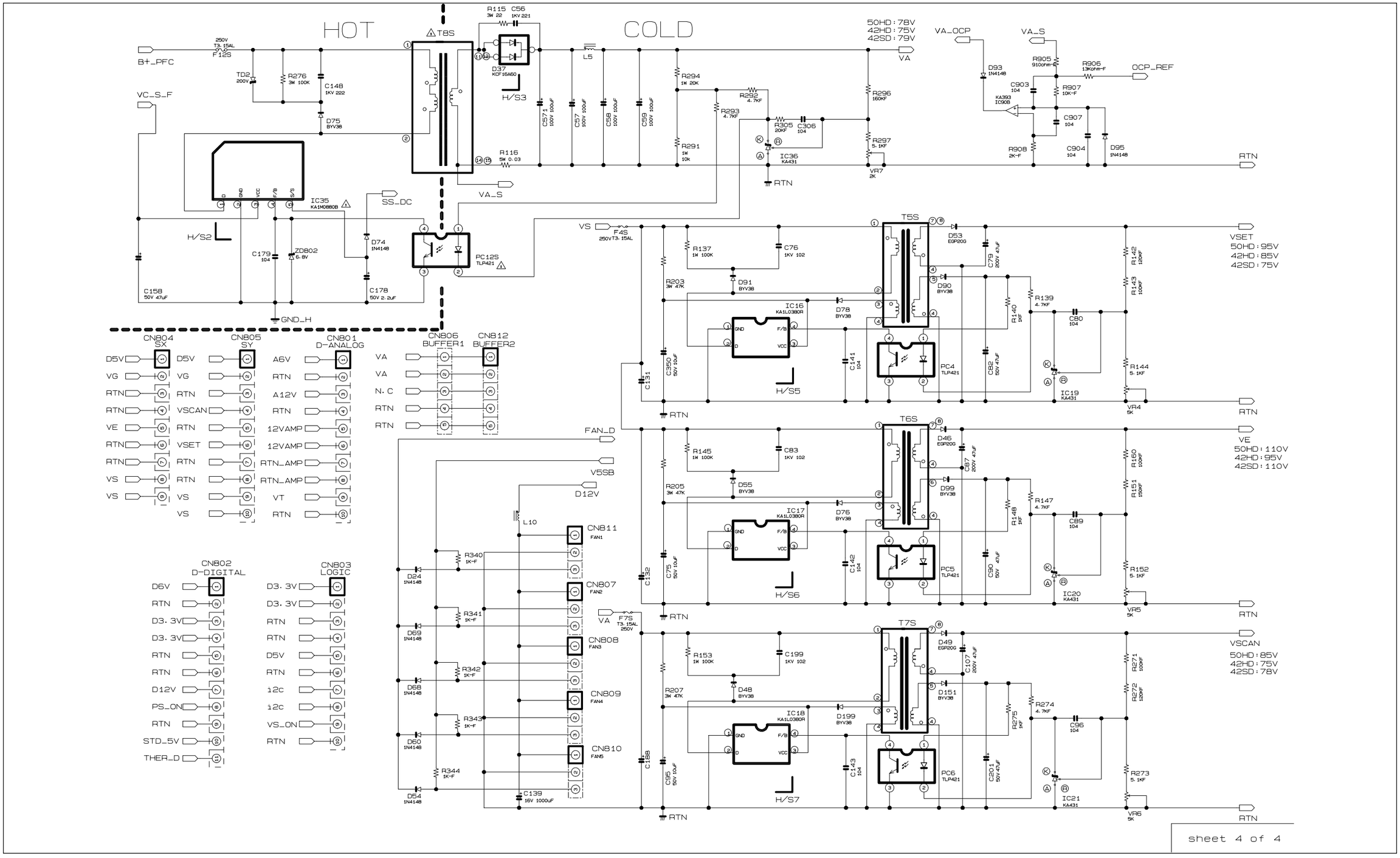
## 5-6 SMPS 2


50HD : 89V
42HD : 91V
42SD : 85V
B+_PFC
F20S
250V
T5.0AL
D9 UF5408
L1
D10
RHRP1560
VCC_S_R
BD1
D15XB60
BD3
D15XB60
LIVE
NEUTRAL
BYV38#2
D1
D2
D3
1N4148
Q3
KSP2222A
Q4
KSP2907A
R11
10
R12
30
R8
MPC 5W 0.1
R10
MPC 5W0.1
D6
1N4148
R13 4.7
R14
1/4W 10
D7
1N4148
R15 4.7
R16
1/4W 10
Q1
47N60
Q2
47N60
R17 10kF
R18
10kF
H/S1
C154
50V 10uF
C290
4.7nF
400V
GND_H
R24
R25
120KF#3
0.25W
R26
R27
100KF
0.25W
R29
3KF
R20
R21
130KF#4
0.25W
R22
R23
C5
450V
330uF
C6
450V
330uF
RTN
CY10S
3.3nF
400V
CY11S
3.3nF
400V
VC_S_R
D11
1N4148
R32
4.7
R33
20
Q6
2SK2372
R34
10K
C424
105
D14
1N4148
R39
4.7
R40
20
Q8
2SK2372
R41
10K
C236
2KV/102
D910
BY398
IC30
IR2109
T1S
T2S
D41
KCF16A60
D42
KCF16A60
L41
RB1
5W
0.03ohm
C26
200V
1200uF
C27
200V
1200uF
RB8
10K
3W
RB9
1.8K
1W
VS
VS_S
RTN
H/S3
C411
472
VG(15V)
IC31
KA317
R804
82
C225
50V
10uF
R803
820
C507
50V
10uF
C225
104
GND_H
R250
300
R62
300
C524
400V/224
C523
400V/224
R45
5W
0.1
H/S2
C191
472
VS_OCP
OCP_REF
D97
1N4148
KA393
IC90A
C905
105
R901
3K-F
R904
13Kohm-F
R903
10K-F
C900
104
R902
10K-F
C940
104
C906
104
IC91
KA431
R900
2K-F
C901
104
D92
1N4148
REF_PFC
R59
20KF
R60
6.2kF
C15 101
R61
22K-F
C16
222
IC1
ML4824
IEAO
Ioc
Isense
Vrms
SS
Vdc
RAMP1
RAMP2
VEAO
F/B
Ref
VCC
VO1
VO2
GND
DClim
PFC
D16 1N4148
VEAO_PFC
R63
470K
C17
104
C18
103
D800
1N4148
S_S
D850
1N4148
m-S
R65
30
R66
1kF
R46
RS 3W 360K
R47
RS 3W 360K
R51
RS 3W 510K
R52
RS 3W 510K
R50
100KF
R55
180
C11
474
C10
105
AC_V_S
D20
1N4148
D801
1N4148
S_S
D19
1N4148
SS_PFC
Q7B
KSP2907A
D36
1N4148
D101
1N4148
D102
1N4148
C12
471
R58
18kF
C13
10uF
50V
C144
103
C14
222
C19
104
D71
1N4148
C20
102
C21
102
C250
50V
47uF
C23
104
C24
103
VC_S_F
R375
4.7KF
R374
10K-F
R91
200
PC1S
TLP421
R90
2K-F
R87
200KF
C32
102
C305
333
R86
20KF
IC5
KA431
R92
5.1KF
VR1
2K
STD_5V
R391
240
Q21
A1020
R373
360
VS_ON
PC10S
TLP421
R371
240
AC_V_S
REFPFC
VC_S_R
R73
200KF
R71
1kF
R246
1M
R245
1M
R75
1M
C33
1uF
50V
C35
102
R72
240kF
R800
1kF
IC4B
KA358
R191
1kF
S_S
C405
50V
47uF
HOT
COLD
sheet 2 of 4

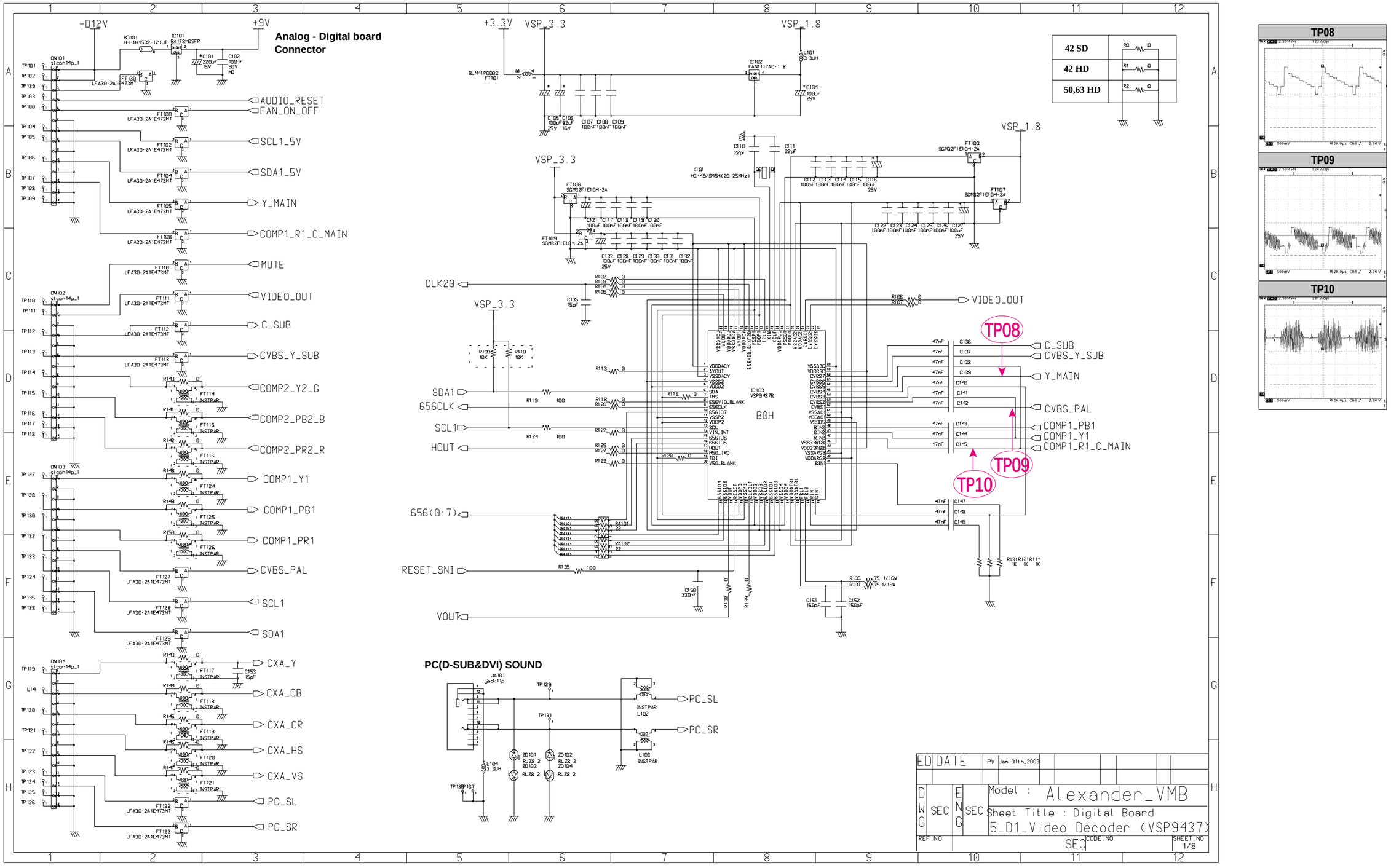
## 5-7 SMPS 3


V5SB
RT6
100-5FT
R170
2KF
R171
2KF
FAN_D
IC9A
KA393
D35
1N4148
B1
TH_DET
R172
3KF
R173
2KF
C189
50V 47UF
RTN
A
R105
4.7KF
C43
104
Q19
KSP2907A
m-s
VC_A_OF
VEAO_PFC
SS_PFC
SS_DC
REF_PFC
R108
4.7KF
RT3
SYPGT10850JD04
R111
1KF
Q20
KSP2222A
C44
105
R109
2KF
ZD10
4.7V
D32
1N4148
C45
50V
47uF
VS_S_R
GND_H
B+_PFC
250V
T3.15AL
F11S
R113
3W 100K
C48
1KV 222
D31
BYV38
T4S
IC7
KA1M0880B
H/S2
SS_DC
D34
1N4148
C130
104
ZD801
8.2V
R707
6.8K-F
C47
50V 2.2uF
PC11S
TLP421
VCC_S_R
R106
100
R131
1KF
PC7S
TLP421
VG(15V)
D6V
D3.3V
VS
VA
ZD52
6.8V
ZD55
4.7V
ZD2
51V
ZD3
51V
ZD4
SHORT
ZD5
47V
ZD6
47V
D23
1N4148
D44
1N4148
D59
1N4148
D58
1N4148
C902
50V
47UF
R134
1KF
R133
4.7K-F
C98
104
ZD44
4.7V
Q23
KSP2222A
HOT
VS_OCP
VA_OCP
VG
R331
4.7KF
D29
1N4148
IC29A
KA339
R265
51F
C221
104
R264
10KF
12V_ISI
R256
4.7KF
12V_ISO
Y
R332
4.7KF
D30
1N4148
IC29B
KA339
R263
270F
C223
104
R261
4.7KF
5V_ISI
R257
4.7KF
5V_ISO
R333
4.7KF
D39
1N4148
IC29C
KA339
R260
270F
C224
104
R259
4.7KF
3V3_ISI
R258
4.7KF
3V3_ISO
R433
5.1KF
C229
35V
220uF
RTN
COLD
D209
D10LC20
R990
0.1ohm
C337
35V
1000uF
R960
430
Q60
KSP2907A
C338
16V
1000uF
R801
3W 360
12VAMP
D201
BYV38
R326
3W 180
R364
3W 180
R365
3W 180
RTN
VT(33V)
D202
D10LC20
C321
50V
47uF
IC14
KA7815
ZD40
1W 15V
C333
50V
47uF
R709
1W 10K
VG(15V)
C331
35V
470uF
C332
50V
47uF
ZD41
1W 18V
RTN
IC50
KA7815
RTN
D203
D10LC20
12V_ISI
R432
5W 0.03
12V_ISO
L22
L24
A12V
D12V
R315
0.5W 20
C329
1KV 102
C328
16V
1000uF
C327
16V
1000uF
R414
3W 360
R415
3W 360
C325
16V
1000uF
C324
16V
1000uF
RTN
5V_ISI
D205
MBR20100CT
R430
5W 0.03
5V_ISO
L30
L29
D6V
A6V
R314
0.5W 20
C318
1KV 102
C314
10V
1500uF
C313
10V
1500uF
C311
35V
220uF
C310
10V
1500uF
R412
3W 68
R413
3W 68
RTN
MAG1
D3.4V
3V3_ISI
D3.4V
D301
MBR20100CT
L28
Q61
B772
R962
120ohm
R964
430
R963
750ohm
R312
4.7KF
R311
360
R309
15KF
R310
100KF
C961
104
R965
1K-F
C307
104
C312
10V
1500uF
R307
6.2KF
C320
10V
1500uF
IC60
KA431
R966
1K-F
C315
10V
1500uF
D960
1N4148
R961
68
D961
1N4148
R970
68
IC37
KA431
VR8
2K
VR100
1K
RTN
RTN
IC34
PQ1CQ203FZ
H/S8
L25
L48
V5A
SPEAKER_1
5A_12
R381
12KF
C360
16V
1000uF
D79
1N4148
R384
18KF
R401
2.7KF
D80
SB560
C245
1KV
472
C246
10V
1500uF
R385
4.7KF
VR3
2K
RTN
RTN
sheet 3 of 4

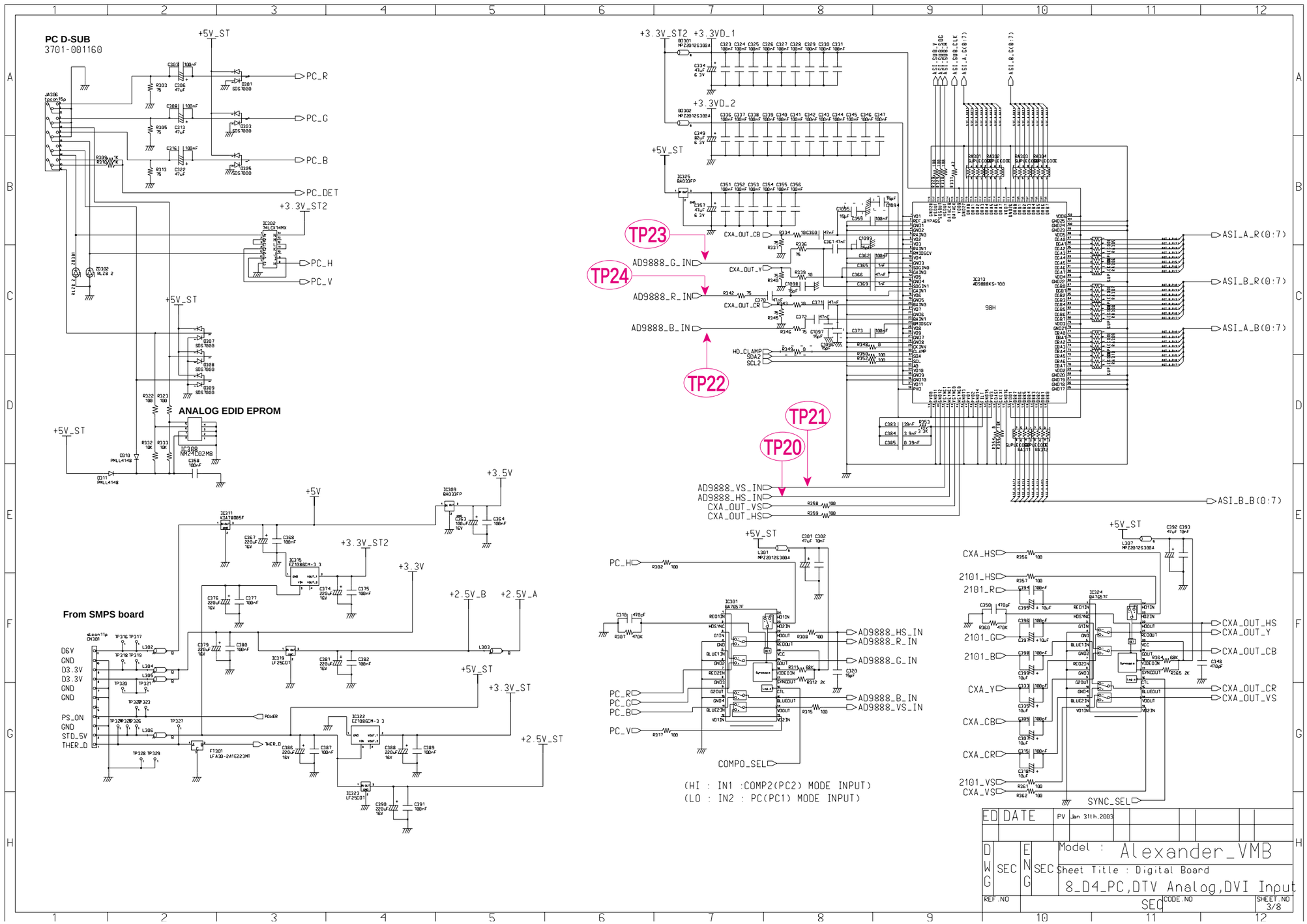
## 5-8 SMPS 4

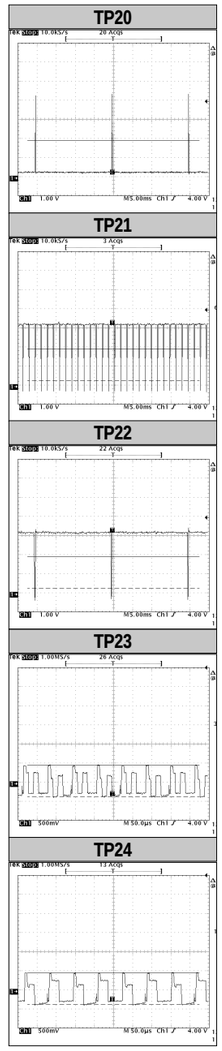

HOT
COLD
B+_PFC
VC_S_F
F12S
TD2
R276
C148
D75
T8S
R115
C56
D37
H/S3
L5
R116
VA_S
SS_DC
IC35
KA1M0880B
H/S2
C179
ZD802
D74
PC12S
TLP421
C158
C178
GND_H
C57-1
C57
C58
C59
R294
R292
R293
R291
R305
C306
IC36
KA431
R296
R297
VR7
50HD : 78V
42HD : 75V
42SD : 79V
VA
RTN
VA_OCP
VA_S
D93
R905
R906
OCP_REF
C903
R907
IC393
IC908
C907
R908
C904
D95
VS
F4S
T5S
R137
C76
D53
EGP20G
C79
R142
R143
VSET
50HD : 95V
42HD : 85V
42SD : 75V
R203
D91
IC16
KA1L0380R
D78
D90
R139
R140
C80
C350
C131
C141
C82
PC4
IC19
R144
VR4
H/S5
T6S
R145
C83
D55
R205
IC17
D76
D45
C87
R160
R151
R147
R148
C89
C75
C142
C90
PC5
IC20
R152
VR5
H/S6
VE
50HD : 110V
42HD : 95V
42SD : 110V
T7S
R153
C199
D48
R207
IC18
D199
D49
C107
R271
R272
R274
R275
C96
C95
C143
C201
PC6
IC21
R273
VR6
H/S7
VSCAN
50HD : 85V
42HD : 75V
42SD : 78V
CN804 SX
CN805 SY
CN801 D-ANALOG
CN806 BUFFER1
CN812 BUFFER2
D5V
VG
RTN
VSCAN
VE
VS
A6V
A12V
12VAMP
RTN_AMP
VT
N. C
FAN_D
V5SB
D12V
L10
CN811 FAN1
CN807 FAN2
CN808 FAN3
CN809 FAN4
CN810 FAN5
R340
R341
R342
R343
R344
D24
D69
D68
D60
D54
C139
F7S
T3. 15AL
250V
C138
C132
CN802 D-DIGITAL
CN803 LOGIC
D6V
D3. 3V
i2c
PS_ON
VS_ON
STD_5V
THER_D
sheet 4 of 4

## 5-9 DIGITAL 1

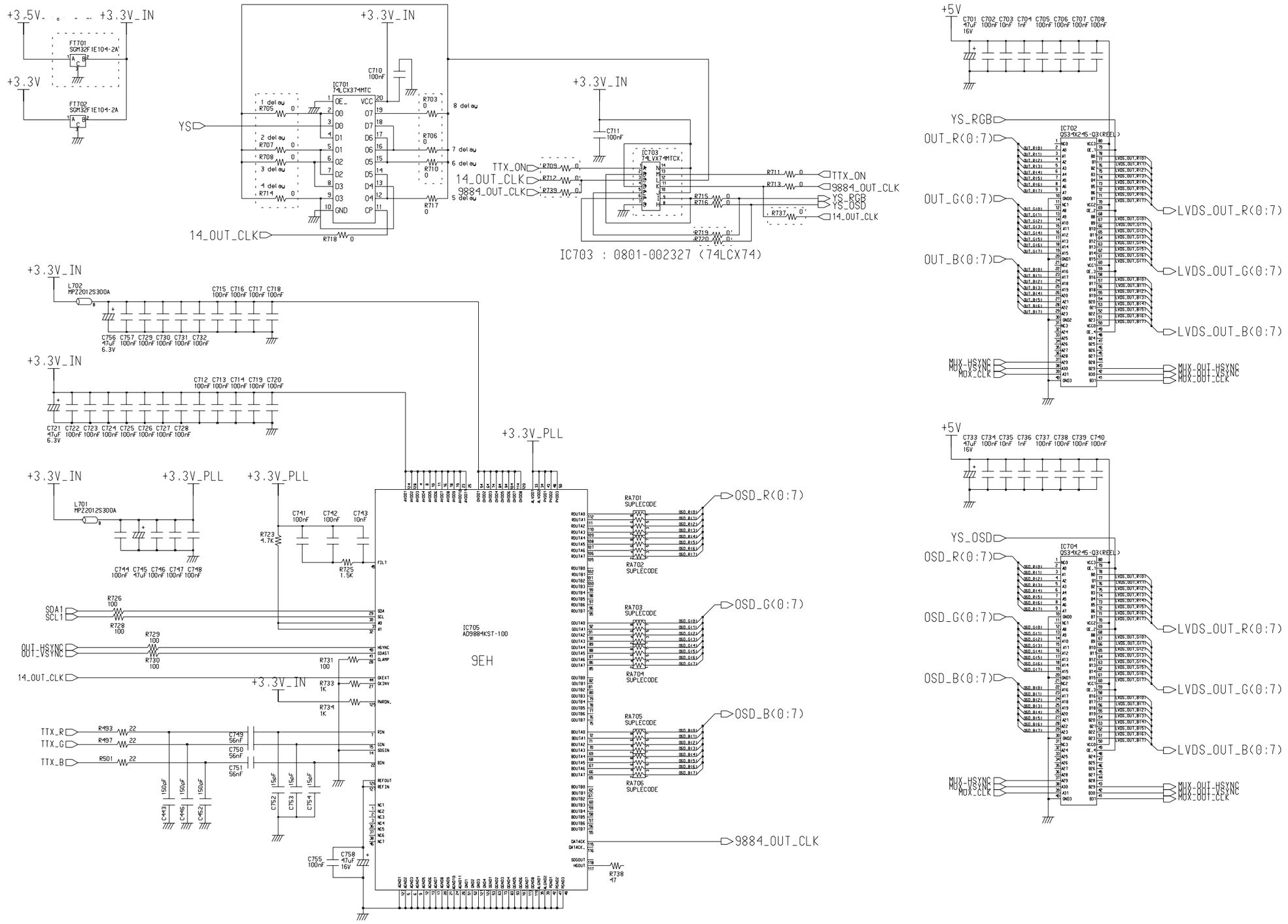

Analog - Digital board Connector
+D12V
+9V
+3.3V
VSP_3.3
VSP_1.8
AUDIO_RESET
FAN_ON_OFF
SCL1_5V
SDA1_5V
Y_MAIN
COMP1_R1_C_MAIN
MUTE
VIDEO_OUT
C_SUB
CVBS_Y_SUB
COMP2_Y2_G
COMP2_PB2_B
COMP2_PR2_R
COMP1_Y1
COMP1_PB1
COMP1_PR1
CVBS_PAL
SCL1
SDA1
CXA_Y
CXA_CB
CXA_CR
CXA_HS
CXA_VS
PC_SL
PC_SR
CLK20
SDA1
656CLK
SCL1
HOUT
656(0:7)
RESET_SNI
VOUT
42 SD
42 HD
50,63 HD
TP08
TP09
TP10
PC(D-SUB&DVI) SOUND
ED DATE PV Jan 31th, 2003
DWG SEC ENG SEC
Model : Alexander_VMB
Sheet Title : Digital Board
5_D1_Video Decoder (VSP9437)
REF NO
SEC CODE NO
SHEET NO 1/8

## 5-10 DIGITAL 2

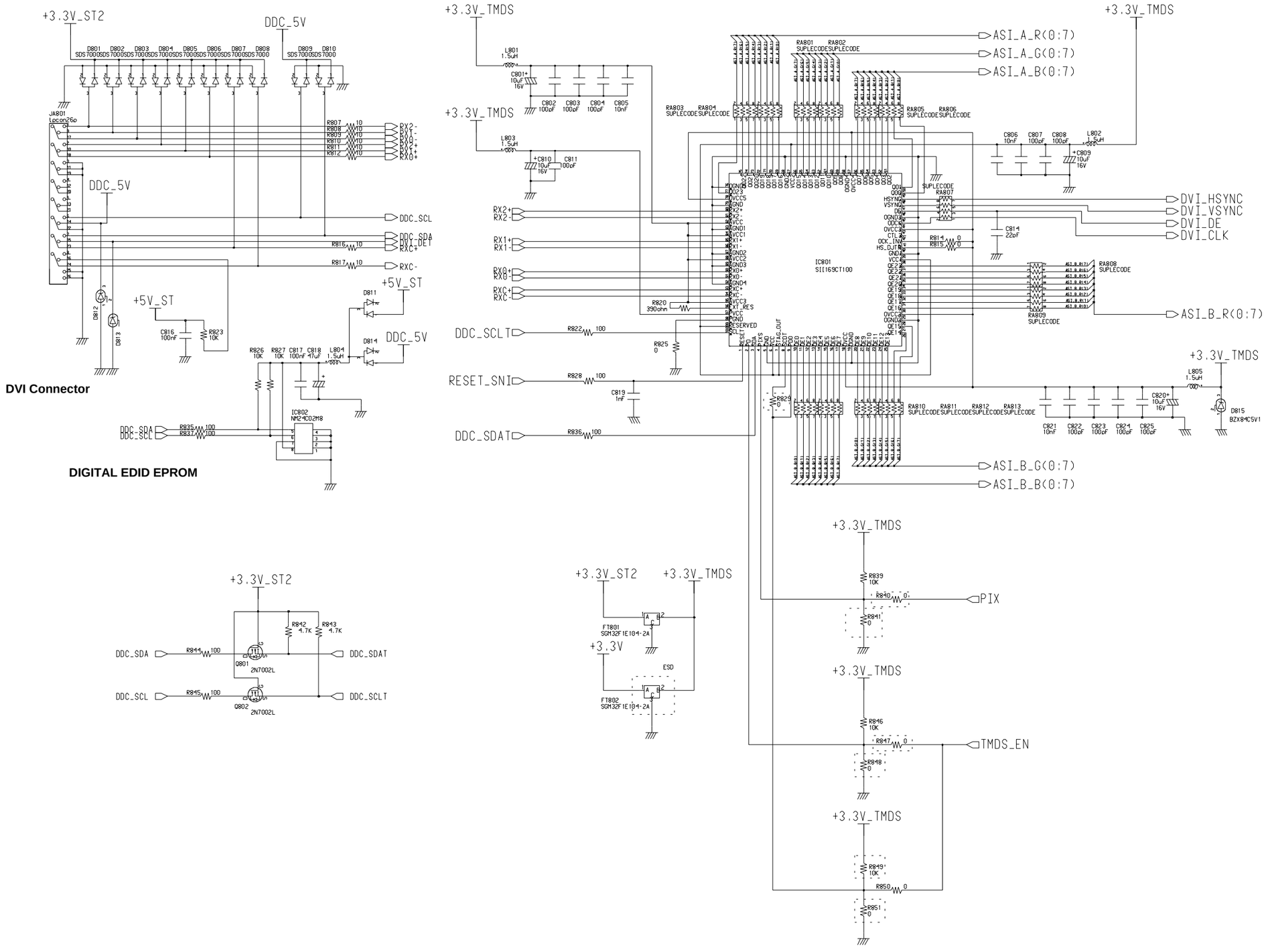


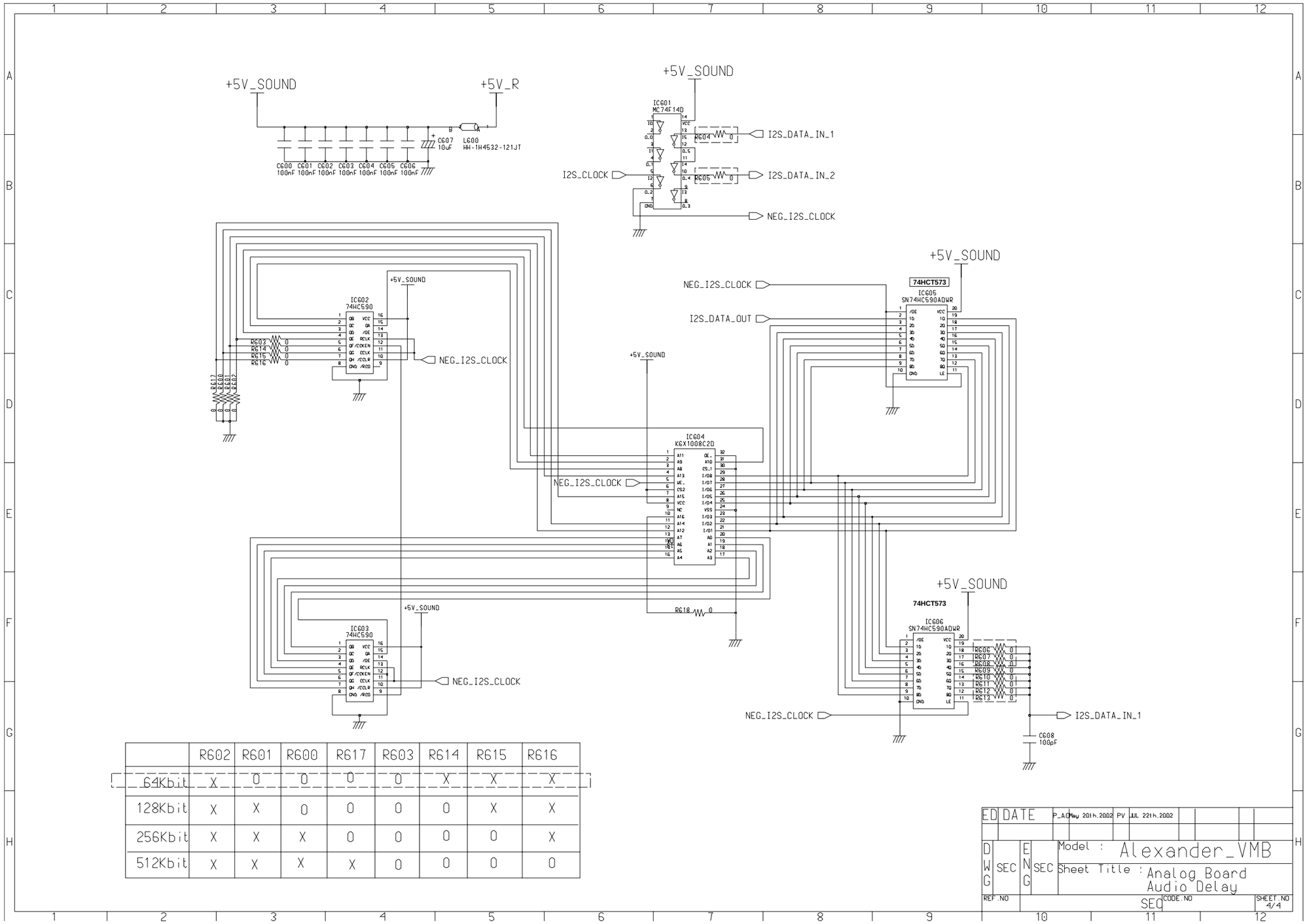
## 5-11 DIGITAL 3



## 5-12 DIGITAL 4

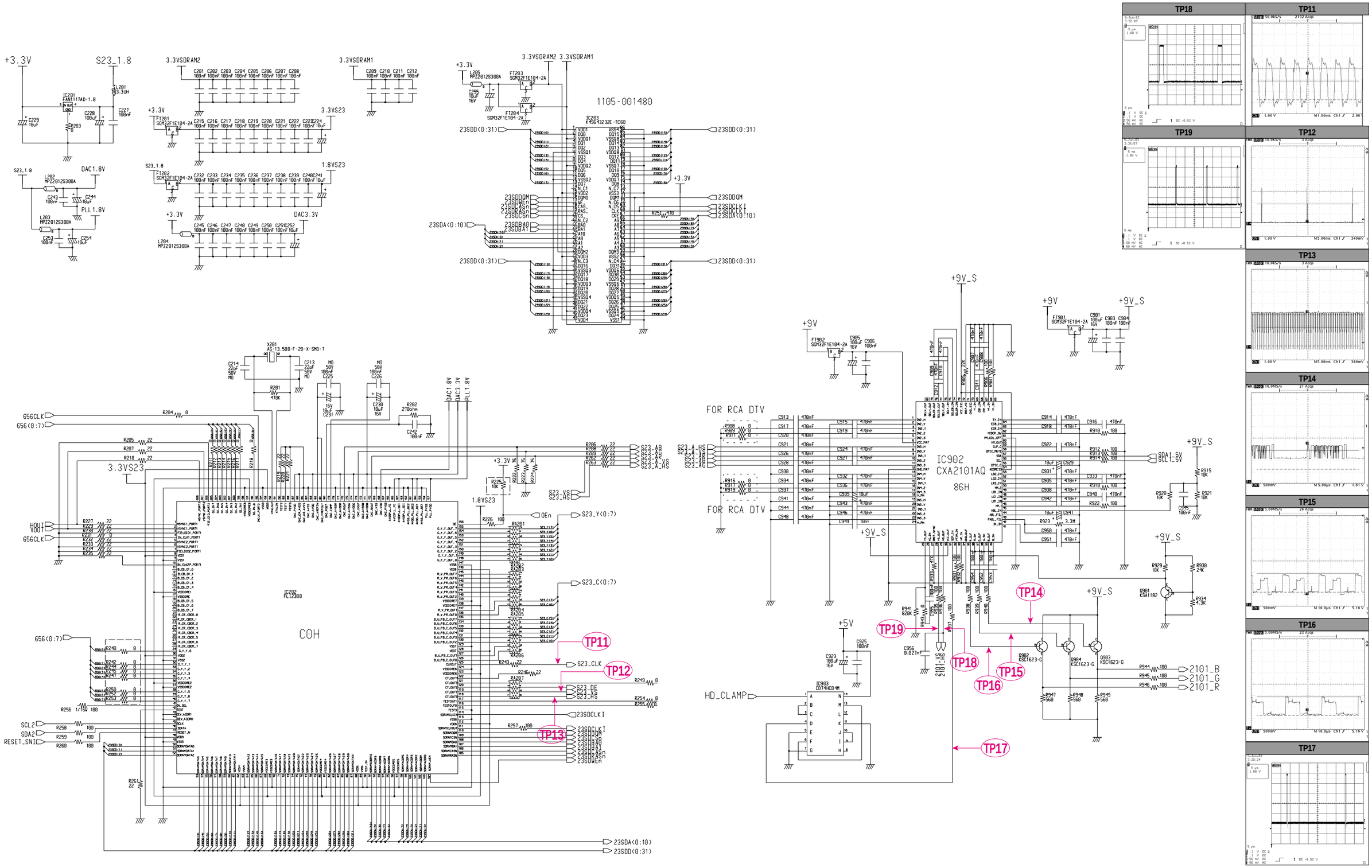


## 5-13 AUDIO DELAY

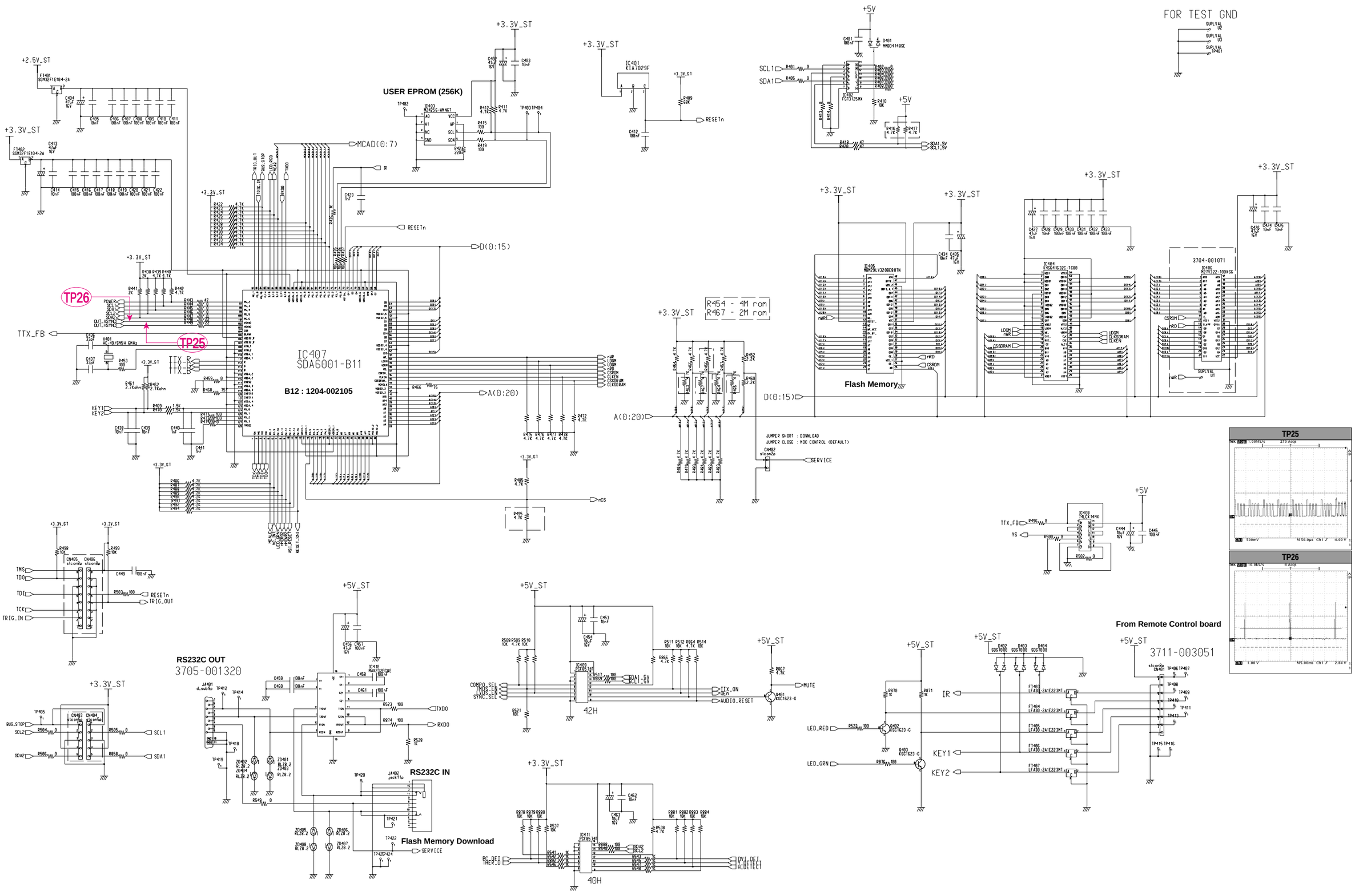



| | R602 | R601 | R600 | R617 | R603 | R614 | R615 | R616 |
|---|---|---|---|---|---|---|---|---|
| 64Kbit | X | 0 | 0 | 0 | 0 | X | X | X |
| 128Kbit | X | X | 0 | 0 | 0 | 0 | X | X |
| 256Kbit | X | X | X | 0 | 0 | 0 | 0 | X |
| 512Kbit | X | X | X | X | 0 | 0 | 0 | 0 |

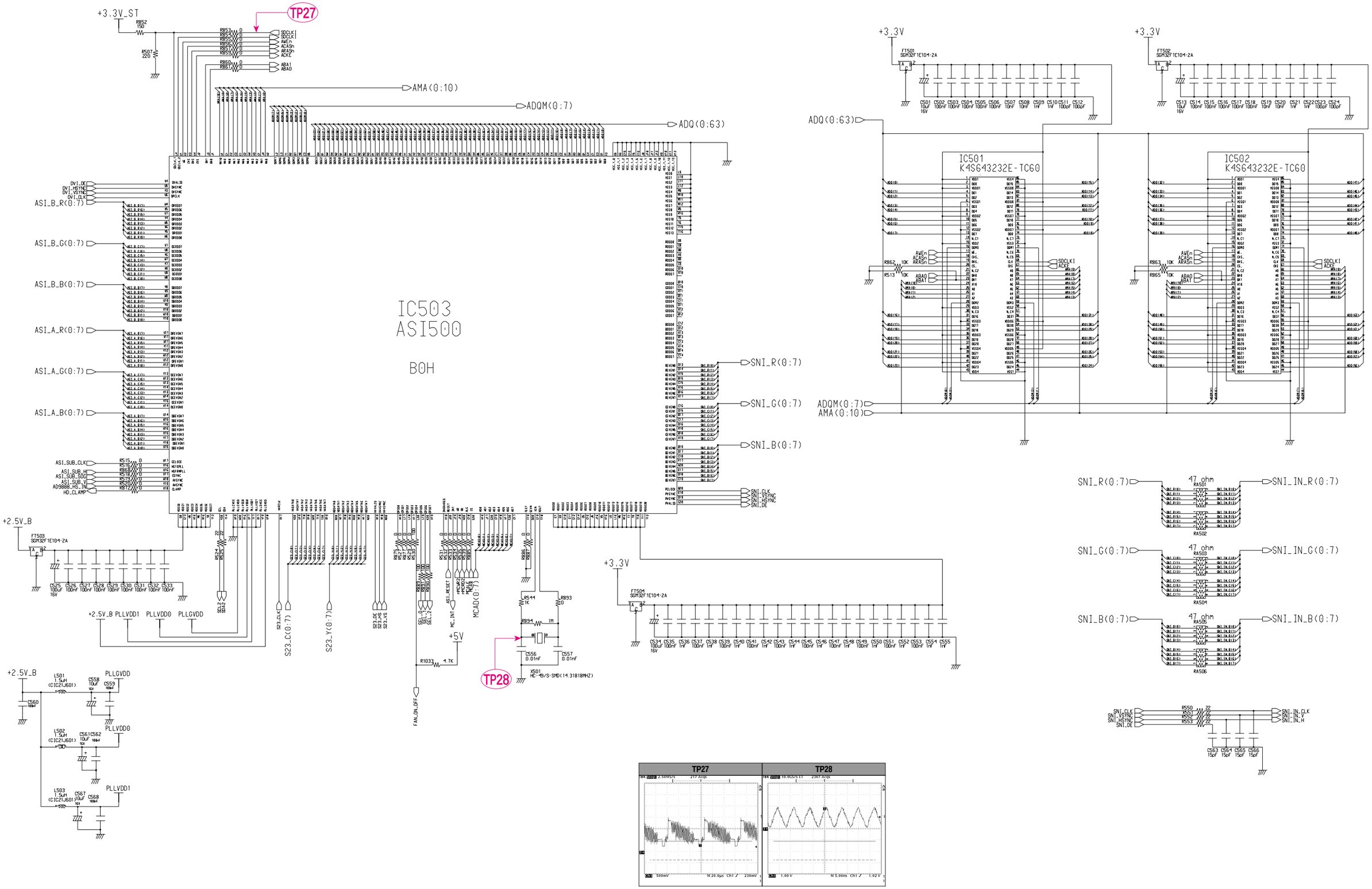
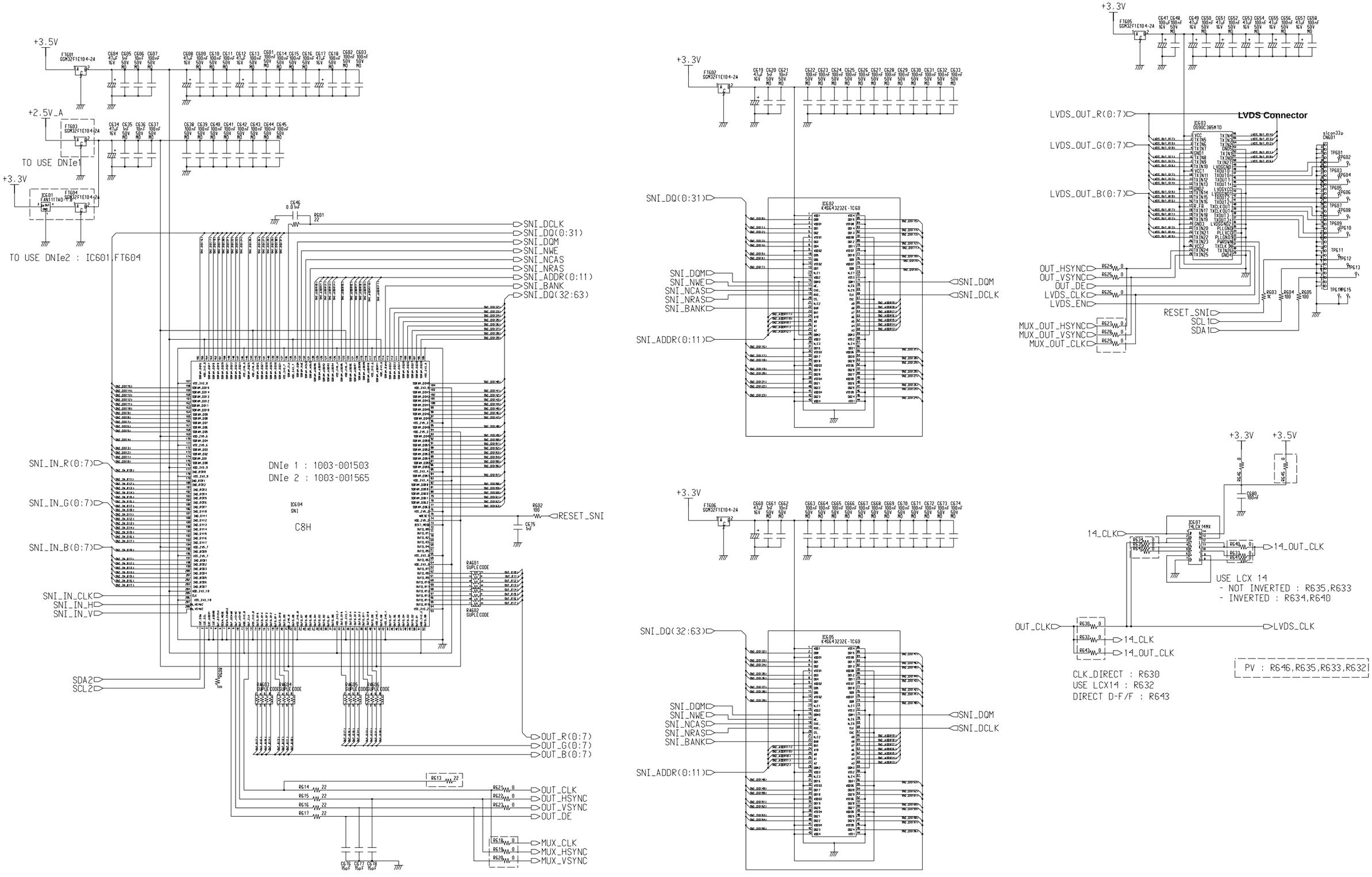
## 5-14 DIGITAL 5



## 5-15 DIGITAL 6



## 5-16 DIGITAL 7



## 5-17 DIGITAL 8